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Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 09/518,287 | Applicant(s) FOTI ET AL. | |
|---|---|---|---|
| | Examiner LeChi Truong | Art Unit 2126 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *16 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

**1.** Claims 1- 34 are represented for the examination.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

**2.** Claims **1, 7, 9, 12, 18, 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cantin et al (Persistent object-mapping in an object-oriented environment) in view of Nec (Index implementation method for object oriented database – involves comparing value for structure type member variable to obtain size related rank for variables).

**3.** **As to claim 1**, Cantin teaches the invention substantially as claimed including: retrieving method signatures (selected object, page 2, ln 5-55/ the object class DOG, page 5, ln 1-25/persisten object OP, page 8, ln 1-25), an object (object, page 5, ln 1-10), an object-oriented environment (Object-oriented programming, page 2, ln 1-11), a method name (the dog name, page 5, ln 1-10), data type (the instance variables " dog_type/ type of persistent object, page 5, ln 1-25/ a persistent identifier (PID), page 8, ln 5-25), the data types of input parameters (the object type of the destination persistent medium, page 8, ln 7-25), array-based computing environment( a DB2 persistent medium, page 8, ln 7-25), invoking the method corresponding( invoking/ invoked an environment type in which said data is to be mapped, page 8, ln 30-55),

comparing ( mapping, right col , section : Persistent object-mapping in an object oriented environment/ page 2, ln 46-47/ page 3, ln 1-3).

4. Cantin does not teach ranking the method signature as a function comparison, selecting ... the rank. However, Nec teaches ranking the method signature as a function comparison, selecting ... the rank( value is compared for every member variable defined as this structure type, and size-related rank is performed (page 4/27, right col/ page 9/27, right col), perform search processing of index component (page 12/27, right col/ page 14/ 27, right col), returns retrieval result (page 17/ 27, right col).

5. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Cantin and Nec because Nec's value is compared for every member variable defined as this structure type, and size-related rank is performed apply, perform search processing of index component would improve the search efficiency and to reduce the search cot about a structure type member variable.

**6. As to claim 7,** Cantin teaches data type of the signature (the instance variables " dog_type/ type of persistent object, page 5, ln 1-25/ a persistent identifier (PID), page 8, ln 5-25), the data type of corresponding input parameter (the object type of the destination persistent medium, page 8, ln 7-25), object-oriented environment (object-oriented system, page 2, ln 55-58).

**7. As to claim 9**, Cantin teaches the input parameters (data structure, page 9, ln 5-15), data type (environment type, page 9, ln 5-15), the object-oriented environment (object, page 9, ln 5-5), computer environment (persistent medium, page 6, ln 5-15).

8. **As to claims 12, 18,** they are apparatus claims of claims 1, 7; they are rejected for the same reasons as claims 1, 7 above.

9. **As to claim 23,** Cantin teaches an interface (OPSS, page 2, ln 5-30), identifying (Persistent Id, page 2, ln 5-30), the object-oriented environment (object-oriented programming, page 2, ln 5-30), a technical computing environment method (PDS, page 2, ln 15-50/ page 15-25), a calculation workspace (the schemamapper, page 2, ln 37-54/ page 8, line 5-25), a command interpreter (an interpreter, page 2, ln 36-58), a signature selector (target selection, page 2, ln 36-58) an object (object, page 5, ln 1-10), an object-oriented environment ( Object-oriented programming, page 2, ln 1-11), reference to a method( data, a target, page 2, ln 36-58, the instance variables " dog_type/ type of persistent object, page 5, ln 1-25/ a persistent identifier( PID), page 8, ln 5-25), an object( a selected object, page 2, ln 37-57), invoking the method corresponding( invoking/ invoked an environment type in which said data is to be mapped, page 8, ln 30-55).

10. Cantin does not teach ranking the method signature as a function, selecting ... the rank. However, Nec teaches ranking the method signature as a function, (selecting ... the rank value is compared for every member variable defined as this structure type, and size related rank is performed, page 4/27, right col/ page 9/27, right col), perform search processing of index component (page 12/27, right col/ page 14/ 27, right col), returns retrieval result (page 17/ 27, right col).

11. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Cantin and Nec because Nec's selecting ... the rank value is compared for every member variable defined as this structure type, and size related rank is

performed, perform search processing of index component, returns retrieval result apply would improve the search efficiency and to reduce the search cot about a structure type member variable and made the system for accessing externally defined objects from an array based mathematical computing environment more consistent.

**12.** Claims **3-6, 8, 14-17, 19, 25-29, 34** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cantin et al (Persistent object-mapping in an object-oriented environment) in view of Nec (Index implementation method for object oriented database – involves comparing value for structure type member variable to obtain size related rank for variables) and further in view of Hartmut Poglheim (Genetic and Evolutionary Algorithm Toolbox for use with Matlab).

**13.** **As to claim 3**, Cantin and Nec do not teach calculating fitness ranking. However, Poglheim teaches calculating fitness ranking (the fitness value for an individual is calculated, section Rank-based fitness assignment).

14. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Cantin, Nec and Poglheim because Poglheim's the fitness value for an individual is calculated in order to sort and to select the method signatures that are based on the selection probability.

**15.** **As to claim 4**, Poglheim teaches a preference value, the corresponding signature as a function (object value fitness value, Section 3.1 Rank-based fitness assignment/ Section 6.3, 6.4).

**16.** **As to claim 5**, Poglheim teaches supper classes, calculation the fitness ranking, calculating difference in level within class (derived from the objective function (Fitness values, section 6.3), the fitness assigned to each individual depends only on its position (Rank-based fitness assignments, section 3.1).

17. **As to claim 6**, Poglheim teaches calculating a difference in a number of dimensions (the number of individual in the population is used for calculation (section 3.1).

18. **As to claim 8**, Poglhemic teaches a two-dimensional array storing (table 1: Dependency of fitness value from selective pressure (section 3,1).

19. **As to claims 14-17, 19, 25,** they are apparatus claims of claims 3-8; therefore, they are rejected for the same reason as claims 3-8 above.

20. **As claim 26**, Poglheim teaches the fitness ranking, the corresponding signature as a function (object value fitness value, Section 3.1 Rank-based fitness assignment/ Section 6.3, 6.4).

21. **As to claims 27, 28, 29, 34**, they are apparatus claims of claims 5,6, 8; therefore, they are rejected for the same reasons as claim 5, 6, 8.

22. Claims **2, 13, 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cantin et al (Persistent object-mapping in an object-oriented environment) Nec (Index implementation method for object oriented database – involves comparing value for structure type member variable to obtain size related rank for variables) and further in view of Admitted Prior Art (APA).

23. **As to claim 2,** Cantin and Nec do not teach a mathematical tool (Malab software program, col 15, ln 66 to col 16, ln 1-40). However, APA teaches a mathematical tool (conventional mathematical tools, page 1, ln 5-28).

24. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Cantin , Nec and APA because APA's conventional mathematical tools would provide a comprehensive technical computing environment for performing numerical linear algebraic calculations.

**25. As to claims** 13, 24, they are apparatus claims of claim 2; therefore, they are rejected for the same reasons as claim 2 above.

**26.** Claims **10, 11, 20, 21, 22, 31, 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cantin et al (Persistent object-mapping in an object-oriented environment) Nec (Index implementation method for object oriented database – involves comparing value for structure type member variable to obtain size related rank for variables) in view of Hartmut Poglheim (Genetic and Evolutionary Algorithm Toolbox for use with Matlab) and further in view of Bill Venners (Eternal Math).

**27. As to claims 10, 11,** Cantina teaches interpreting the method (an interpreter, page 2, ln 40-45).

28. Cantin, Nec and Poglheim do not teach the object-oriented environment include java virtual machine. However, Venners teaches teach the object-oriented environment include java virtual machine (java virtual machine, page 1-2).

29. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Cantin, Nec, Poglheim and Venners because Venners's the object-oriented environment include java virtual machine would make system for accessing

externally defined objects from an array based mathematical computing environment more consistent.

**30.** **As to claims 20-22 and 31, 32**, they are apparatus claims of claims 10, 11; therefore, they are rejected for the same reasons as claim 10, 11 above.

**31.** Claim **30** is rejected under 35 U.S.C. 103(a) as being unpatentable over Cantin et al (Persistent object-mapping in an object-oriented environment) in view Nec (Index implementation method for object oriented database – involves comparing value for structure type member variable to obtain size related rank for variables) and further in John W. Eaton (A High-level Interactive Language for Numerical Computations Edition 3 for Octave Version 2.1.x)

**32.** **As to the system of claim 30**, see the rejection of claim 9. Further, Cantin, Nec do not teach conventional table for convert. However, Eaton teaches conventional table for convert (table of input conversions, page 18 of 23).

33. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Cantin, Nec and Eaton because Eaton's table of input conversions would summarize what all the different conversion do.

**34.** Claim **33** is rejected under 35 U.S.C. 103(a) as being unpatentable over Cantin et al (Persistent object-mapping in an object-oriented environment) in view of Nec (Index implementation method for object oriented database – involves comparing value for structure

type member variable to obtain size related rank for variables) further in view of David M. Gay (Symbolic-Algebraic Computations in a Modeling Language for Mathematical Programming).

35. **As to claim 33**, Cantin and Nec do not teach a Java Native Interface. However, Gay teaches a Java Native Interface (the java Native Interface, Page 7, ln 17-20)

36. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Cantine, Nec and Gay because Gay's the java Native Interface would call function written in another language.

**Response to the argument**

37. Applicant amendment filed on 3/16/2003 has been considered but they are not persuasive.

38. In remarks, applicant argued in substance that (1) " Neither reference discuses the retrieving of method signatures containing lists of data types" (2) " neither reference teach the comparison of the data types listed in the method signatures with input parameters" (3) " data type from persistent storage medium is not evaluated as a potential input parameter into a method that belongs to the persistent object"(4) " It is not discuss the ranking of a set of the method signatures and does not discuss the ranking of a set of method signature as a function of the comparison".

39. Examiner respectfully traversed applicant's remarks:

As to the point (1), Cantin teaching selected object (retrieving object)(page 2, ln 5-55/ 5, ln 1-25/ page 8, ln 1-25), the selected object is a class object containing data types and method (page 3, ln 5-7/ page 5, ln 1-8).

As to the point (2), Cantin teaches mapping (comparing) between selected object and the persistent object (page 3, ln 3-10/ / page 2, ln 46-47/ page 3, ln 1-3/ page 5, ln 25-28).

As to the point (3), " a potential input parameter into a method" was not in the claims, Cantin teaches row in a relational database table (columns for Account identifier, Brand specification, and balance in the accont) (page 5, ln 27-18) for an array based computing environment.

As to the point (4), Nec teaches value is compared for every member variable defined as this structure type, and size-related rank is performed (page 4/27, right col/ page 9/27, right col), perform search processing of index component (page 12/27, right col/ page 14/ 27, right col), returns retrieval result (page 17/ 27, right col), Nec teaches comparing and ranking between class, value and every member variable defined as structure type in object oriented environment.

**40. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LeChi Truong whose telephone number is (703) 305 5312. The examiner can normally be reached on 8 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 703-305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR of Public PAIP. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIP system, contact the Electronic Business Center (EBC) at 866-217-9197(toll-free).

LeChi Truong

May 28, 2004

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